

Applicant(s): Cornelis Bernardus Aloysius Wouters  
Serial No.: 09/846,596  
For: METHOD, SYSTEM AND COMPUTER PROGRAM FOR STORAGE MEDIUM DATA MANAGEMENT  
(formerly Method, System and Computer Program)  
Filed: April 30, 2001  
Examiner: Woo H. Choi  
Group Art Unit: 2189

NL000240

### **REMARKS/ARGUMENTS**

Claims 1-3, 5-9, 11-14 and 16 are pending in the present application. Claims 1-3, 5-9, 11, 12, and 14 have been amended hereby.

The Action (1) objected to the title of the invention as not being descriptive; (2) objected to claims 2, 3, 6, 8, 9, 11 and 12 for informal reasons; (3) rejected claims 1-3, 5-9, 11-13 and 16 under 35 U.S.C. 103(a) as being unpatentable over PCT Publication No. WO95/10083 to Assar et al. (hereinafter "the Assar reference") in view of knowledge that what was purportedly generally available to one of ordinary skill in the art; (4) rejected claims 1-3, 5-9, 11-13 and 16 under 35 U.S.C. 103(a) as being unpatentable over the Assar reference in view of U.S. Patent No. 6,000,006 to Bruce et al. (hereinafter "the Bruce reference"); and (5) rejected claim 14 under 35 U.S.C. 103(a) as being unpatentable over the Assar reference, or the Assar reference in view of the Bruce reference, and further in view of U.S. Patent No. 6,092,160 to Marsters (hereinafter "the Marsters reference").

Regarding item (1) identified above, it is respectfully noted that the Applicant has adopted the title suggested by the Examiner.

Regarding item (2) above, Applicant respectfully submits that present claims 2, 3, 6, 8, 9, 11 and 12 effectively traverse the stated objection thereto.

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Regarding item (3) above, the Action acknowledges that the Assar reference at least does not disclose or suggest “increasing the limit value when a predetermined number, which is at least the majority, of the counters of the blocks exceed the limit value”. In addition, in an effort to address the acknowledged shortcomings of the Assar reference, the Action contends that the method taught by Assar et al. is “functionally equivalent” to Applicant’s claimed method, and, as Applicant has purportedly failed to disclose, via the specification, a distinct purpose for using the claimed method, the particular method employed is merely an obvious design choice (see OA, pp.3-4, and 10).

In response, Applicant respectfully notes that a finding of “obvious design choice” is precluded where the claimed structure and the function it performs are different from the prior art. *See In re Gal*, 980 F.2d 717, 25 USPQ 2d 1076 (Fed. Cir. 1992). Thus, as the Action acknowledges that the method taught by Assar et al., which method requires, *inter alia*, that “after all blocks approach [a programmable maximum value] all the erase counters ... are cleared” (p.16, lns.19-31) (w/emphasis added), clearly differs from “increasing the limit value [e.g., a programmable maximum value] when a predetermined number, which is at least the majority, of the counters of the blocks exceed the limit value”, as presently recited, e.g., in claim 1 (w/emphasis added), Applicant respectfully submits that present claims 1-3, 5-9, 11-13 and 16 are clearly patentable over the Assar reference irrespective of whether or not the Examiner’s contentions regarding the requisite motivation have merit.

In addition, Applicant respectfully notes that, contrary to that which is suggested via the Action, the specification clearly identifies/discloses, *inter alia*, reasons/advantages associated with

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“increasing the limit value”. Consider, for example, the follow excerpt:

In a particular embodiment of the method, the limit value is increased when the majority of the counters of the blocks from said variety exceed the limit value. This embodiment is advantageous in that the limit value can now be initially set to a low value, so that the wear of the storage medium is evenly distributed without large differences in the values of the associated counters of various blocks. With a large limit value, differences of values of the counters may run high, so that a number of blocks reach the end of their lifetime faster, whereas other blocks have experienced a few mutations and may still last for a long time. (p.3, lns.13-20 (w/emphasis added)).

In view of this excerpt, as well as other parts of the specification (e.g., p.8, lns.10-33), Applicant respectfully submits that the specification, as originally filed, clearly identifies/discloses notable advantages over the prior art resulting from “increasing the limit value”.

Thus, based at least on the foregoing, Applicant respectfully submits that claims 1-3, 5-9, 11-13 and 16 are clearly patentable over the Assar reference, and such being the case, reconsideration and withdrawal of the stated rejection of such claims are respectfully requested.

Regarding item (4) identified above, the Action, as discussed above, acknowledges (i) that the Assar reference at least does not disclose or suggest “increasing the limit value when a predetermined number, which is at least the majority, of the counters of the blocks exceed the limit value, ”, but contends that the method taught by Assar et al. is “functionally equivalent” to Applicant’s claimed method. The Action further suggests (ii) that the Bruce reference addresses the noted shortcomings associated with the Assar reference. (see OA, p.6).

Additionally, in attempting to rebut Applicant’s arguments submitted via the Response dated 8-15-05, as to the improper combination of the Bruce reference and the Assar reference, the Examiner

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asserts, in pertinent part: *(iii)* that Applicant offers no evidence that Bruce proposes to replace Assar, and further that Assar is not mentioned at all in the Bruce reference, *(iv)* that the motivation to combine the two references comes directly from the Bruce reference, and *(v)* that “the test for obviousness is not what the references teach individually, but what the combined teaching of references would have suggested to one skilled in the art”. (see OA, p.11).

In response, Applicant respectfully submits the following:

Regarding *(i)* above, “[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ 2d 1780, 1783–84 (Fed. Cir. 1992). Thus, absent some suggestion in Assar to increase the limit value when a predetermined number of the counters associated with the blocks reach or exceed such limit value, it is immaterial whether or not the method taught by Assar et al. is “functionally equivalent” to Applicant’s claimed invention. Please note that the foregoing remarks may also be applied to item *(3)* discussed previously above.

Regarding *(ii)* above, in suggesting that the Bruce reference accommodates for the shortcomings of the Assar reference, the Action cites the last four lines of the Bruce abstract, as well as column 9, lines 13-20 of the Bruce specification, asserting that these excerpts teach “a method of data management on a storage medium comprising a variety of blocks in which data can be stored, where the limit value is increased when a predetermined number which is at least the majority of

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counters of blocks exceed the limit value". In response, Applicant respectfully notes **(a)** that the Bruce reference distinctly requires TWO counts an "incremental-write count" indicating an incremental number of write-erase cycles, and a "total-write-count" indicating the total number of writes to a block since manufacture, and **(b)** that this dual-counter system is intended to have "advantages over single-counter systems", such as the Assar system (see, Bruce, col.9, ln. 56). Applicant further respectfully notes that according to the Bruce system, wear-leveling is performed on a block ONLY when BOTH the "total-write count" and the "incremental-write count" exceed system-wide threshold values, and that the "incremental-write count" is cleared ONLY AFTER a block is wear-leveled. (see, e.g., abstract, col.3, lns.7-10). Thus, the process taught by Bruce et al., distinctly requires that TWO threshold values (i.e., a "total write" threshold value and an "incremental write" threshold value) be exceeded before any wear-leveling action is initiated, and thus before any clearing of the "incremental-write count" (note: the "total-write count" is never cleared). According to Bruce et al., it is only after BOTH threshold values are reached, that a wear leveling action takes place and the "incremental-write counter" reset/cleared. Accordingly, as the Assar reference clearly requires that ALL the erase counters be cleared/reset after all the blocks approach a SINGLE programmable threshold value, Applicant respectfully submits that the suggested reference combination fails at least because the references teach away from one another.

Regarding **(iii)** above, Applicant respectfully directs the Examiner to column 2, lines 19-33, where Bruce et al. clearly describes their understanding of the teachings provided via two Assar patents (i.e., USP5479638 and USP5485595), and moreover, clearly state that "[p]eriodically clearing the erase counters [as taught by Assar et al.] is undesirable because there is no way to determine the

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total number of erase/write cycles to a given block”. Applicant respectfully further notes that the Assar reference cited by the Action (i.e., WO95/10083) stems from USP5485595. It follows then that, contrary to that which is suggested via the Action, Bruce et al., clearly intended for their dual-counter system to replace and overcome the shortcomings associated the Assar single-counter system (col.2, lns.19-33 and col.9, ln. 56).

Regarding (iv) above, Applicant respectfully submits that in view of at least the foregoing discussion, the Bruce reference, contrary to that which is suggested via the Action, not only fails to provide the requisite motivation but also in fact teaches away from the Assar system.

Regarding (v) above, Applicant respectfully submits that the test for obviousness does require each reference to be individually considered at least with respect to making a determination as to whether a cited reference teaches away from the proposed combination. That is, in determining obviousness, if a cited reference suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the proposed combination, then the reference teaches away and the combination fails. *In re Gurley*, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994), *citing United States v. Adams*, 383 U.S. 39, 52, 148 USPQ 479, 484 (1966) (“disadvantages in old devices which would naturally discourage the search for new inventions may be taken into account in determining obviousness”). Thus, as Bruce et al. clearly identify disadvantages in the Assar system, and accordingly teach/suggest away from such a system, Applicant respectfully submits that the proposed reference combination cannot stand.

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Thus, based at least on the foregoing, Applicant respectfully submits that claims 1-3, 5-9, 11-13 and 16 are clearly patentable over the cited reference combination (i.e., the Assar reference in view of the Bruce reference), and as such is the case, reconsideration and withdrawal of the stated rejection of such claims are respectfully requested.

With respect to item (5) above, Applicant respectfully submits that as claim 14 depends directly from claim 1, and as the Marsters reference fails to overcome the noted shortcomings associated with the both the Assar reference and the Assar/Bruce reference combination, reconsideration and withdrawal of the rejection of claim 14 are also respectfully requested.

In sum, it is respectfully submitted that the present claims are patentable over each of the cited references and/or any combination thereof. Hence, this application is in condition for allowance. Accordingly, reconsideration and withdrawal of all objections, and all rejections of the claims, are respectfully requested.



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